Scan Do® ULTRA

Plus, SCAN DO ULTRA/D – With Serial Digital Video Output

USER'S MANUAL

WORLD HEADQUARTERS
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INCLUDED WITH THIS PRODUCT

1 - Scan Do Ultra computer to video scan/down converter

1 - AC power line cord

1 - 6 foot computer input cable for VGA and Macintosh®

1 - 12 foot composite video output cable

1 - 12 foot S-Video output cable

1 - 6 foot RS-232 serial data cable

1 - Rack mounting kit

1 - Set of spare feet and a spare fuse

1 - User's Manual

1 - Remote Control Operation Manual

1 - Product Registration card

AVAILABLE OPTIONAL ACCESSORIES

- 6 foot 13W3 male to BNC cable for workstation input

- 6 foot 13W3 female to BNC cable for workstation monitors

- 12 foot BNC adapter cable for RGB input or output

- 12 foot Sharp projector cable for RGB output

- 12 foot SCART cable for output

- RF modulator for North America channels 3 and 4

- AC line cord for North America, Japan, UK, Australia, or Continental Europe

See page 24 for a complete list of products and part numbers.

Scan Do is a registered trademark of Communications Specialties, Inc.
Macintosh and Mac are registered trademarks of Apple Computer, Inc.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRONIC SHOCK, DO NOT EXPOSE. THIS APPLIANCETO RAIN OR MOISTURE.

CAUTION: TO REDUCE THE RISK OF ELECTRONIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electronic shocks.

This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

USER & CERTIFICATION INFORMATION

FCC STATEMENT

WARNING: This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

UL INFORMATION

This product carries the UL and CUL marks for ITE equipment, Listing #: 8D47

CE INFORMATION

Standards to which conformity is declared:

EMC: EN 55022: 1994, CISPR 22: 1993, Class B Limit
                EN 50082-1: 1992

                            IEC 801-2: 1991

                            IEC 801-3: 1984

                            IEC 801-4: 1988

Low Voltage Directive:

                EN 60950: 1992+A1+A2

                IEC 950: 1991+A1+A2

INTRODUCTION

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Thank you for purchasing Scan Do Ultra, Communications Specialties' broadcast-quality scan converter and down converter. With Scan Do Ultra, you now have the ability to convert high-resolution computer and workstation graphics into a form suitable for integration within a traditional video (NTSC or PAL) environment. Applications include broadcasting, video production and editing, presentation display, videoconferencing and multimedia development. In addition, Scan Do Ultra/D provides the ability to output the converted computer video in serial digital format, according to SMPTE 259M standards, so as to interface with all digital video production, editing and graphics equipment. Scan Do Ultra does not require any special software and operates completely externally from your computer.

Scan Do Ultra performs as both a scan converter and down converter, meaning that it can convert computer video not only to standard, interlaced television video, but also to lower resolutions of non-interlaced computer video. When operating as a scan converter, Scan Do Ultra can convert any non-interlaced computer video input with a horizontal sync frequency from 24 to 90 kHz to a broadcast quality NTSC or PAL video. Four video output formats are provided -- composite, S-Video, RGBS, or YUV. In addition, Scan Do Ultra/D also offers standard SMPTE 259M digital output. When functioning as a downconverter, Scan Do Ultra can take the same range of computer resolutions and convert them to either 640 x 480 VGA/Mac or 800 x 600 SVGA.

Like all the products from Communications Specialties, Scan Do Ultra comes with our continuing commitment to provide support. In order to assist us in this process, please be sure to mail in your product registration card. This will make it easier for us to notify you with any new product announcements or other information concerning our product line. Should you need to contact us for support, our office is open Monday through Friday, from 8:30 AM to 5:00 PM Eastern Time. We also offer a comprehensive web site for your added convenience.

Thank you for choosing Scan Do Ultra. As always, we welcome your comments and suggestions.

INSTALLATION

1. Disconnect your monitor from the monitor port on your computer.

2. For a VGA or Mac computer, use the provided 6-foot input cable to connect the monitor port on your computer to the connector on the rear panel of Scan Do Ultra (either VGA In or MAC IN). This reversible cable is used for both VGA and Mac computers.

3. As an alternative, you may use the 5 BNC connectors to connect RGB and sync signals. You may connect computer video with either separate sync (H and V), composite sync (CS), or RGB with sync on GREEN. Scan Do Ultra will automatically determine which sync format you are using.

4. Connect your monitor, if you have one, to the MONITOR connector labeled VGA OUT or MAC OUT or, if you are using the BNC input connectors, to the BNC COMPUTER LOOP-THROUGH connectors.

5. Connect the AC power cord provided with Scan Do Ultra to the AC inlet connector. Connect the AC line cord to the wall outlet to provide power to Scan Do Ultra.

6. Connect one of Scan Do Ultra's NTSC/PAL video outputs to your video equipment.

NTSC/PAL OUTPUTS

COMPOSITE: This is a single composite video signal.

S-VIDEO: This is an advanced form of video where the brightness and color parts of the image are actually on two separate signals.

RED, GREEN, BLUE, SYNC: This output has separate RED, GREEN, BLUE, and SYNC signals which can be used by some video equipment and monitors. Composite sync can be added to the GREEN signal. See Page 15 for details.

Y, R-Y, B-Y: This component output format uses the same output connectors as **RED, GREEN,** and **BLUE**. The front panel selection (see Page 15 for details) determines whether these connectors are RGB or Component outputs.

SDI: (Scan Do Ultra/D only) This output is compliant with SMPTE 259M and provides a serial digital component output.

DOWN CONVERTED COMPUTER COMPATIBLE OUTPUTS

In addition to the NTSC/PAL outputs just described, Scan Do Ultra features three down converted outputs that provide RGB video with sync signals that correspond to popular computer video timings. These outputs can be used directly with computer monitors, data projectors, and LCD panels to achieve higher resolutions than possible with the NTSC/PAL outputs. The front control panel allows you to designate which of the three outputs is active (see page 13).

The three down converted outputs on Scan Do Ultra are described below:

RED, GREEN, BLUE, SYNC: This output is active in all three output modes: VGA640, VGA800, and MAC. Sync can be added to the GREEN signal. See Page 15 for details.

VGA: This output is active when the VGA640 and VGA800 modes are selected. The pinout is compatible with to a standard VGA monitor.
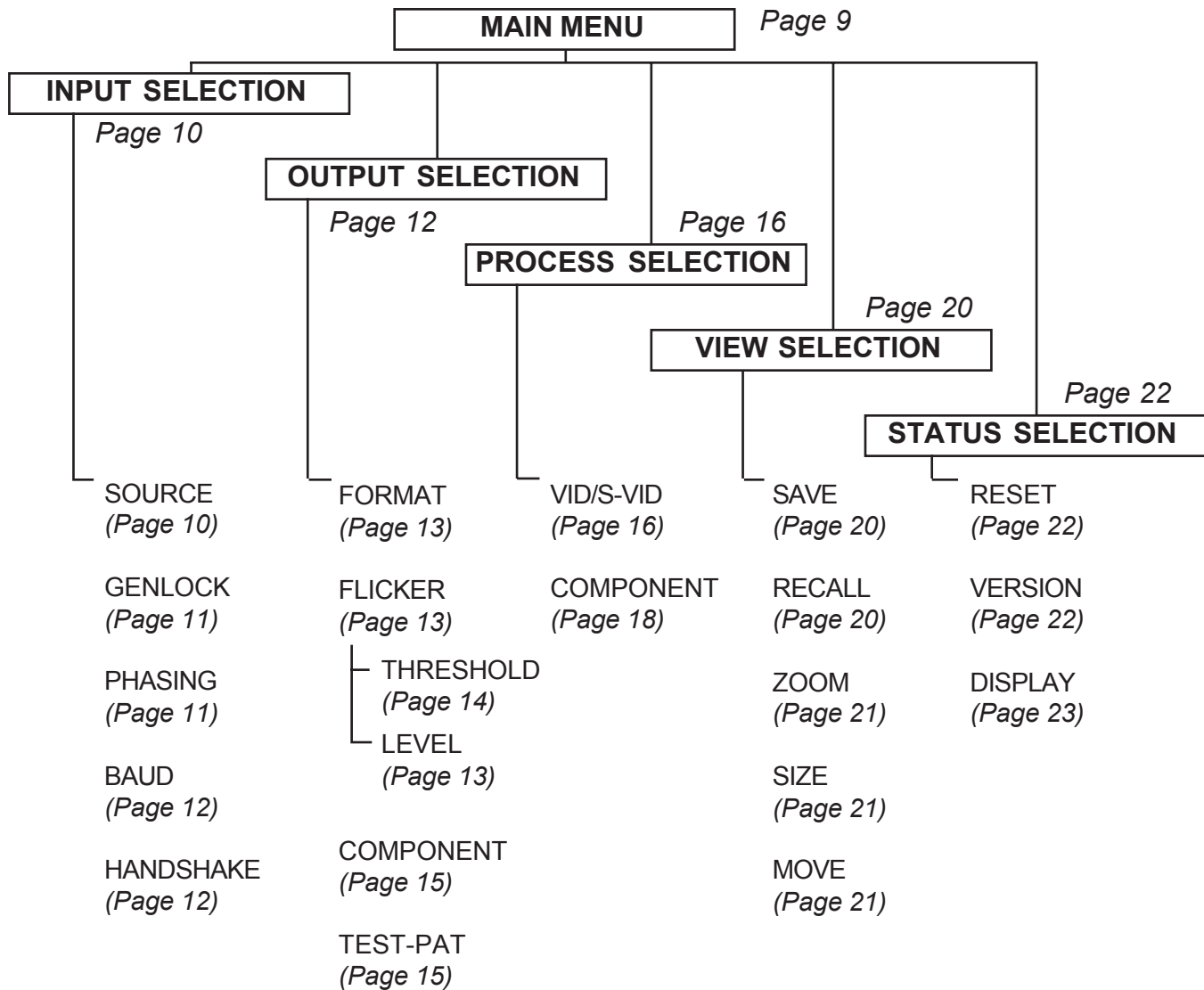
MAC: This output is active when the MAC mode is selected. The pinout is compatible with a standard MAC monitor.

These down converted outputs can be set for one of three different resolutions and timing standards (or Formats):

- VGA640: 640 x 480 @ H=31.5 kHz, V=60 Hz
- VGA800: 800 x 600 @ H=35.1 kHz, V=56 Hz
- MAC: 640 x 480 @ H=35.0 kHz, V=66 Hz

FRONT PANEL MENU

The following tree shows the overall menu structure for Scan Do Ultra. Details of each SubMenu are given on the page number indicated.

```
                              ┌─────────────────┐
                              │   MAIN MENU     │   Page 9
                              └─────────────────┘
    ┌──────────────────────┐
    │   INPUT SELECTION    │
    └──────────────────────┘
         Page 10
                    ┌──────────────────────┐
                    │   OUTPUT SELECTION   │
                    └──────────────────────┘
                         Page 12              Page 16
                              ┌────────────────────────┐
                              │   PROCESS SELECTION    │
                              └────────────────────────┘
                                             Page 20
                                   ┌──────────────────────┐
                                   │   VIEW SELECTION     │
                                   └──────────────────────┘
                                                   Page 22
                                        ┌──────────────────────┐
                                        │   STATUS SELECTION   │
                                        └──────────────────────┘
```

SOURCE *(Page 10)*	FORMAT *(Page 13)*	VID/S-VID *(Page 16)*	SAVE *(Page 20)*	RESET *(Page 22)*
GENLOCK *(Page 11)*	FLICKER *(Page 13)*	COMPONENT *(Page 18)*	RECALL *(Page 20)*	VERSION *(Page 22)*
PHASING *(Page 11)*	└ THRESHOLD *(Page 14)*		ZOOM *(Page 21)*	DISPLAY *(Page 23)*
BAUD *(Page 12)*	└ LEVEL *(Page 13)*		SIZE *(Page 21)*	
HANDSHAKE *(Page 12)*	COMPONENT *(Page 15)*		MOVE *(Page 21)*	
	TEST-PAT *(Page 15)*			

OPERATION

S can Do Ultra is designed to be easy to use, and you should find its operation to be intuitive. However, we suggest that you read the following pages to fully understand how Scan Do Ultra operates and to take advantage of its many features.

The center of operational control for Scan Do Ultra is the front panel LCD display, the five "soft" buttons directly below the display, and the MENU BACK button to the right of the display. All of the functions and selections of Scan Do Ultra are accessed through these buttons and displayed on the LCD. The functions are grouped in a "tree" structure. The top row of the LCD display will describe the group of functions available. The bottom row will give up to five specific functions that the user can select by pressing the corresponding soft button directly below.

Pressing the MENU BACK button will bring you back to the previous menu level or "up" the menu tree.

The descriptions below are in accordance with the grouping of these functions in the tree structure used.

MENU BACK BUTTON

The **MAIN** menu:

• Is the top most menu in the tree.

• Offers five choices to access the major group of functions

MAIN MENU

```
MAIN  MENU
INPUT   OUTPUT    PROCESS    VIEW     STATUS
```

INPUT: Accesses the INPUT SELECTIONS submenu

OUTPUT: Accesses the OUTPUT SELECTIONS submenu

PROCESS: Accesses the PROCESS SELECTIONS submenu

VIEW: Accesses the VIEW SELECTIONS submenu

STATUS: Accesses the STATUS SELECTIONS submenu

INPUT SELECTONS MENU
(from the Main menu)

The **INPUT SELECTIONS** menu is used to select:

• The input source for conversion

• RS-232 port Remote Control parameters

• Genlock controls and timing set up

The INPUT SELECTIONS menu has submenus to access these functions:

```
INPUT  SELECTIONS ...
SOURCE  GENLOCK   PHASING   BAUD  HANDSHAKE
```

SOURCE: Accesses the INPUT SOURCE CONNECTOR menu for selecting the computer source

GENLOCK: Accesses the INPUT GENLOCK SIGNAL menu

PHASING: Accesses the INPUT GENLOCK PHASING menu

BAUD: Acceses the INPUT BAUD RATE menu

HANDSHAKE:Accesses the INPUT HANDSHAKE menu

Note: The GENLOCK choice will only appear if the NTSC or PAL output formats have been selected.

Note: The PHASING choice will only appear if GENLOCK is ON and a valid genlock reference is present.

INPUT SOURCE CONNECTOR
SUBMENU
(from the Input Selections menu)

The **INPUT SOURCE CONNECTOR** submenu selects:

• The 15-pin VGA/MAC connector, or

• The set of 5 BNC connectors

Selecting the choice 15-PIN will convert the signal on either the DB-15 connector (VGA IN) or on the HD-15 connector (MAC IN). The alternate connector not used for the input may be used for a loop-through computer monitor. Selecting the choice BNC will convert the signal on the set of BNC input connectors. This input will automatically detect and process either separate H and V sync, composite sync, or sync-on-green formats.

```
INPUT  SOURCE  CONNECTOR?
       15-PIN                   BNC
```

INPUT GENLOCK SIGNAL SUBMENU
(from the Input Selections menu)

The **INPUT GENLOCK SIGNAL** submenu:

•   Turns the genlocking function on or off

```
INPUT  GENLOCK  SIGNAL  AS  REFERENCE?
            OFF                    ON
```

If ON is selected, the NTSC/PAL outputs will be locked to the reference signal source on the GENLOCK INPUT connector.

If OFF is selected, the NTSC/PAL outputs will not be locked to the genlock reference signal even if present. Instead the timing of the NTSC/PAL outputs will be determined by the internal timing generator.

Note: This submenu is available only when NTSC or PAL output modes are selected.

INPUT GENLOCK PHASING
SUBMENU
(from the Input Selections menu)

The **INPUT GENLOCK PHASING** submenu:

•   Allows for the adjustment of horizontal and subcarrier timing when genlocking

```
INPUT  GENLOCK  PHASING?
  H-      H+                    SC-      SC+
```

Buttons H- and H+ will adjust the relative advance or delay of the video output with respect to the reference horizontal sync.

Buttons SC- and SC+ will advance or delay the relative phase of the output subcarrier with respect to the reference burst.

NOTE: Proper genlock phasing can ony be achieved with the use of a waveform monitor and vectorscope locked to the genlock reference signal.

NOTE: INPUT GENLOCK PHASING submenu will only appear when there is a valid genlock reference signal present.

**INPUT BAUD RATE
SUBMENU
(from the Input Selections menu)**

The **INPUT BAUD RATE** submenu:

• Sets the baud or data rate for the RS-232 Remote Control port

```
INPUT  BAUD  RATE  FOR  REMOTE  CONTROL?
   OFF      1200      2400      4800      9600
```

The OFF setting will disable the Remote Control function. The other settings will set the baud rate. This must match your control computer's baud rate.

**INPUT HANDSHAKING
SUBMENU
(from the Input Selections menu)**

The **INPUT HANDSHAKING** submenu:

• Sets the type of flow control or "handshaking" between Scan Do Ultra and the control computer

```
INPUT  HANDSHAKING  FOR  REMOTE  CONTROL?
   NONE                HARD      SOFT      BOTH
```

Handshaking is necessary to ensure that neither Scan Do Ultra nor the control computer overflow each other's communications buffer. The type of handshaking selected must match that of the control computer's.

**OUTPUT SELECTIONS
MENU
(from the Main menu)**

The **OUTPUT SELECTIONS** menu is used to select:

• The output format type

• The amount of flicker reduction

• The component video format type

• A test pattern for display

```
OUTPUT  SELECTIONS
 FORMAT  FLICKER  COMPONENT          TEST-PAT
```

FORMAT: Accesses the OUTPUT FORMAT submenu.

FLICKER: Accesses the OUTPUT FLICKER FILTER submenu.

COMPONENT: Accesses the OUTPUT COMPONENT TYPE submenu.

TEST-PAT: Accesses the OUTPUT TEST PATTERN submenu

NOTE: The choice of FLICKER will only appear when the NTSC or PAL output formats have been selected.

OUTPUT FORMAT SUBMENU
(from the Output Selections menu)

The **OUTPUT FORMAT** submenu:

•   Selects one of five output timings

```
OUTPUT   FORMAT?
  NTSC       PAL        VGA640   MAC640   VGA800
```

NTSC: Selects the NTSC timing standard and activates the VIDEO, S-VIDEO, and COMPONENT outputs.

PAL: Selects the PAL timing standard and activates the VIDEO, S-VIDEO, and COMPONENT outputs.

VGA640:   Selects the down converted outputs in accordance with the VGA timing standard of 640 x 480 at 60 Hz refresh. Only the COMPONENT (RGB only) and VGA outputs are valid at the H and V frequencies for this mode.

MAC640:   Selects the down converted outputs in accordance with the Macintosh timing standard of 640 x 480 at 66 Hz refresh. Only the COMPONENT (RGB only) and MAC outputs are valid for the Hand V frequencies for this mode.

VGA800:   Selects the down converted outputs in accordance with theVESA VGA timing standard of 800 x 600 at 56 Hz refresh. Only the COMPONENT (RGB only) and VGA outputs are valid for the H and V frequencies for this mode.

OUTPUT FLICKER FILTER SUBMENU
(from the Output Selections menu)

The **OUTPUT FLICKER FILTER** submenu:

•   Sets the threshold for when flicker reduction is active

•   Sets the level or amount of flicker reduction

```
OUTPUT  FLICKER FILTER ...
          LEVEL            THRESHOLD
```

The word LEVEL will only appear if the THRESHOLD is not OFF as set in the next submenu.

Flicker reduction is a two step process. First, a threshold is set then the amount of flicker reduction is set. The following submenus explain this in detail.

OUTPUT FLICKER FILTER THRESHOLD SUBMENU
(from the Output Flicker Filter submenu)

The **OUTPUT FLICKER FILTER THRESHOLD** submenu:

• Determines the amount of detail in the image that will be subject to flicker reduction.

```
OUTPUT  FLICKER  FILTER  THRESHOLD?
 OFF                LOW     MEDIUM    HIGH
```

The LOW setting means that only the low frequency part of the video image will be subject to flicker reduction (i.e. longer thin lines and not high detail text). The HIGH setting means that more of the mid and high frequency detail (i.e. text and fine graphics) will be subject to flicker reduction.

OUTPUT FLICKER FILTER LEVEL CONTROL MENU
(from the Output Flicker Filter submenu)

The **OUTPUT FLICKER FILTER LEVEL** control menu:

• Determines the maximum amount of flicker reduction to be used by the flicker filter based on the severity of contrast between a horizontal line and those above and below it.

```
OUTPUT  FLICKER  FILTER  LEVEL?
 - [ .............................] +
```

This control gives the user the ability to obtain the best balance between flicker reduction and preservation of image detail. A setting to the left (- button) means that flicker reduction is low but vertical resolution, or detail, will be high. A setting to the right (+ button) means that there will be more flicker reduction, but vertical resolution will be lower with less detail in the image. A setting too far too the right may result in image distortion depending on the nature of the image. Pressing the center button wil set the level at mid-scale.

NOTE: This function is only active when the OUTPUT FLICKER FILTER THRESHOLD is not set to OFF.

**OUTPUT COMPONENT TYPE SUBMENU
(from the Output Selections menu)**

The **OUTPUT COMPONENT TYPE** submenu:

• Sets the format for the component output

```
OUTPUT  COMPONENT  TYPE?
   BETA    MII              RGBS      RGsB
```

BETA: Selects Y, R-Y, B-Y with Betacam levels

MII: Selects Y, R-Y, B-Y with MII levels

RGBS: Selects RGB with separate sync

RGsB: Selects RGB with sync on the GREEN signal

NOTE: The BETA and MII selections will only be active when in the NTSC or PAL output formats.

**OUTPUT TEST PATTERN SUBMENU
(from the Output Selections menu)**

The **OUTPUT TEST PATTERN** submenu:

• Enables and selects an internal test pattern. The selected pattern will be displayed on whatever output is currently active.

```
OUTPUT  TEST-PATTERN?
   OFF    COLBAR    GRYBAR    HATCH    CIRCLE
```

OFF: Turns off the test pattern generator and restores normal operation.

COLBAR: Generates a SMPTE color bar signal, without Pluge.

GRYBAR: Generates a grey bar signal.

HATCH: Generates a white on black crosshatch pattern.

CIRCLE: Generates a white on black circle.

NOTE: The CIRCLE pattern is a "soft" pattern stored in Scan Do Ultra as the factory default. Other patterns may be made available in the future for downloading in place of this pattern. Contact factory for latest information.

PROCESS SELECTION MENU
(from the Main menu)

The **PROCESS SELECTION** menu:

•   Allows selection of a scan converted output format for processing the visual characteristics of the image

NOTE: The PROCESS menu will not control the SDI output on the Scan Do Ultra/D

```
PROCESS  SELECTIONS  ...
            VID/S-VID           COMPONENT
```
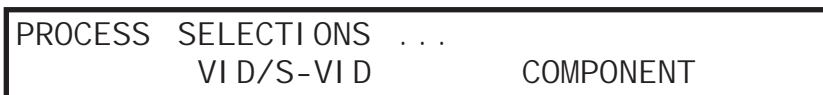
VID/S-VID: Selects the available submenu for processing the Video and S-Video outputs in the active output format.

COMPONENT: Selects the available submenu for processing the Component outputs. This will also affect the down converted output formats.

PROCESS VID/S-VID:NTSC
SUBMENU
(from the Process Selection menu)

The **PROCESS VID/S-VID:NTSC** submenu:

•   Makes available control menus for Brightness, Contrast, Color, and Hue

```
PROCESS  VID/S-VID: NTSC  ...
  BRIGHT   CONTRAST          COLOR     HUE
```

Press one of the soft buttons under the function you want to control and a second control menu will appear specifically for that function.

NOTE: COLOR can only be adjusted when the COMPONENT OUTPUT TYPE is selected to either BETA or MII.

PROCESS VID/S-VID:NTSC
CONTROL MENUS
(from the Process Vid/S-Vid:NTSC submenu)

The **PROCESS VID/S-VID:NTSC** control menu:

•   Looks the same for the Brightness, Contrast, Color, and Hue functions

```
PROCESS  VID/S-VID: NTSC  BRIGHTNESS
  - [ ..............................] +
```

You can switch between control of Brightness, Contrast, Color, and Hue functions by pressing the MENU BACK button to go back to the PROCESS VID/S-VID:NTSC submenu and then selecting the soft button for the function to control.

NOTE: Pressing the Middle soft button will reset the function control to the middle (default) of the scale.

**PROCESS VID/S-VID:PAL SUBMENU
(from the Process Selection menu)**

The **PROCESS VID/S-VID:PAL** submenu:

• Makes available control menus for Brightness, Contrast and Color

```
PROCESS   VID/S-VID: PAL. . .
   BRIGHT   CONTRAST          COLOR
```

Press one of the soft buttons under the function you want to control and a second control menu will appear specifically for that function.

NOTE: COLOR can only be adjusted when the COMPONENT OUTPUT TYPE is selected to either BETA or MII.

**PROCESS VID/S-VID:PAL
CONTROL MENUS
(from the Process Vid/S-Vid:PAL submenu)**

The **PROCESS VID/S-VID:PAL** control menus:

• Looks the same for the Brightness, Contrast, and Color functions

```
PROCESS   VID/S-VID: PAL   BRIGHTNESS
   -  [ . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ]  +
```

You can switch between control of Brightness, Contrast, and Color functions by pressing the MENU BACK button to go back to the PROCESS VID/S-VID:PAL submenu and then selecting the soft button for the function to control.

NOTE: Pressing the Middle soft button will reset the function control to the middle (default) of the scale.

PROCESS COMPONENT:RGB SUBMENU
(from the Process Selection menu)

The **PROCESS COMPONENT:RGBS/RGsB** submenu:

•   Makes available controls for Brightness, Contrast, and RGB Balance

•   Acts only on the Component output in the RGB mode

```
PROCESS  COMPONENT: RGB/RGsB  ...
   BRIGHT   CONTRAST        RGB-BALANCE
```

Press one of the soft buttons under the function you want to control and a second control menu will appear specifically for that function.

PROCESS COMPONENT:RGB CONTROL MENUS
(from the Process Component:RGB submenu)

The **PROCESS COMPONENT:RGB/RGsB** control menus:

•   Looks the same for the Brightness and Contrast functions.

```
PROCESS   COMPONENT: RGB/RGsB  BRIGHTNESS?
  - [ ...............................] +
```

You can switch between control of Brightness, Contrast, and Color Balance functions by pressing the MENU BACK button to go back to the PROCESS COMPONENT:RGB/RGsB submenu and then selecting the soft button for the function to control.

NOTE: Pressing the Middle soft button will reset the function control to the middle (default) of the scale.

The RGB BALANCE control menu looks a little different:

```
RGBS/RGsB  BALANCE?    +OO       +OO       +OO
     –         +       RED     GREEN     BLUE
```

This function is activated by pressing the soft button(s) for thecolor(s) whose level you want to adjust and then pressing the + or - button to increase or decrease the level. The number above the color will change to show you the relative levels between the colors. This function is useful in compensating for variations in the colorimetry of the display monitor.

NOTE: All values will be effected up or down by any adjustments you make to the CONTRAST control.

**PROCESS COMPONENT:
BETA/MII SUBMENU
(from the Process Selection
menu)**

The **PROCESS COMPONENT:RGBS/RGsB** submenu:

•　　Makes available controls for Brightness, Contrast and Color saturation

•　　Acts only on the Component output in the Beta and MII modes

```
PROCESS  COMPONENT: BETA/MII  ...
   BRIGHT   CONTRAST        COLOR
```

Press one of the soft buttons under the function you want to control and a second control menu will appear specifically for that function.

**PROCESS COMPONENT:
BETA/MII CONTROL MENUS
(from the Process Component:Beta/
MII submenu)**

The **PROCESS COMPONENT:BETA/MII** control menus:

•　　Looks the same for the Brightness, Contrast and Color functions

```
PROCESS  COMPONENT: BETA/MII  BRIGHTNESS?
  - [ ...............................] +
```

You can switch between control of Brightness, Contrast and Color functions by pressing the MENU BACK button to go back to the PROCESS COMPONENT:BETA/MII submenu and then selecting the soft button for the function to control.

VIEW SELECTIONS MENU
(from the Main menu)

The **VIEW SELECTIONS** menu accesses:

• Five memory locations

• Image Zoom function

• Image Size function

• Image Move Function

```
VIEW  SELECTIONS  . . .
   SAVE    RECALL    ZOOM     SIZE     MOVE
```

SAVE: Saves the current settings for image size, screen position (move), and process controls in one of five locations

RECALL: Restores the saved setting from one of five locations

ZOOM: Enlarges or shrinks the displayed image by ganging together both H and V sizing.

SIZE: Allows independent control of horizontal and vertical image size

MOVE: Allows independent horizontal and vertical positioning of the displayed image.

VIEW SAVE SUBMENU
(from the View Selections menu)

The **VIEW SAVE** submenu:

• Has five storage locations

• Each location saves image size and position

• Each location saves image process control settings

```
VIEW  SAVE?
      1        2        3        4        5
```

To save the current image display and process control settings, press the soft button below the location number. Any previous settings in that location will be erased.

VIEW RECALL SUBMENU
(from the View Selections menu)

The **VIEW RECALL** submenu:

• Recalls and applies to the current image the display and process control settings stored at a location

```
VIEW  RECALL?
      1        2        3        4        5
```

To recall the stored image display and process control settings, press the soft button below the desired location number.

VIEW ZOOM CONTROL SUBMENU
(from the View Selections menu)

The **VIEW ZOOM** control menu:

• Proportionally changes the horizontal and vertical size at the same time

```
VIEW  ZOOM?
    100%      -        ZOOM        +
```

The + soft button will expand the image.

The - soft button will shrink the image.

Pressing the ZOOM soft button will toggle you to the SIZE and MOVE control menus.

VIEW SIZE CONTROL SUBMENU
(from the View Selections menu)

The **VIEW SIZE** control menu:

• Independently changes the horizontal and vertical size

```
VIEW  SIZE?
    H-        H+        SIZE      V-        V+
```

The H+ soft button will expand the image horizontally.

The H- soft button will shrink the image horizontally.

The V+ soft button will expand the image vertically.

The V- soft button will shrink the image vertically.

Pressing the SIZE soft button will toggle you to the MOVE and ZOOM control menus.

VIEW MOVE CONTROL SUBMENU
(from the View Selections menu)

The **VIEW MOVE** control menu:

• Independently changes the horizontal and vertical position

The H+ soft button will move the image to the right.

```
VIEW  MOVE?
    H-        H+        MOVE      V-        V+
```

The H- soft button will move the image to the left.

The V+ soft button will move the image down.

The V- soft button will move the image up.

Pressing the MOVE soft button will toggle you to the ZOOM and SIZE control menus.

STATUS SELECTIONS MENU
(from the Main menu)

The **STATUS SELECTIONS** menu:

•   Allows for resetting the system

•   Indicates firmware versions

•   Displays system status

```
STATUS  SELECTIONS ...
   RESET           VERSION          DISPLAY
```

RESET: Initiates a reset of the system. This will erase all saved sizing and control settings in the five preset locations and will restore all processing controls to their factory default settings.

VERSION: Displays the versions of firmware and downloadable test patterns in use by the system.

DISPLAY: Continually displays system status information about which input has been selected, the output and component formats and the characteristics of the input signal.

STATUS RESET SUBMENUS
(from the Status Selections menu)

The **STATUS RESET** submenus:

•   Are two menus for resetting the system to its defaults

```
STATUS  RESET  TO  DEFAULT  SETTINGS?
   CANCEL                              YES
```

```
STATUS  RESET  CONFIRMATION:  ARE  YOU  SURE?
   YES                              CANCEL
```

STATUS VERSION SUBMENU
(from the Status Selections menu)

The **STATUS VERSION** submenu:

•   Displays the version number of the Base and Option firmware in the product

•   Displays the version of the downloadable Test Pattern in the product

These version numbers are useful when diagnosing problems.

```
STATUS  VERSION ...
   BASE           OPTION          TEST-PAT
```

STATUS DISPLAY
(from the Status Selections menu)

The STATUS DISPLAY:

• Shows a collection of input and output states for the unit in real time

• No soft button choices are active

```
Source Line   H-kHz V-Hz   Lock Format BNC
  xx     xx     xx    xx    xx    xx    xx
```

SOURCE: Shows whether the 15-pin VGA/Mac connectors or the BNC connectors are the active input.

LINE: Shows how many total horizontal scan lines per frame there are in the computer signal at the active input. This includes both active and blanking lines.

H-kHz: Shows what the approximate horizontal sync frequency is of the active input.

V-Hz: Shows what the approximate vertical sync frequency is of the active input.

LOCK: Shows whether genlock is on or off when in the NTSC or PAL output format modes.

FORMAT: Shows what the active output format is: NTSC, PAL, VGA640, VGA800 or MAC640

BNC: Shows the active format of the output component BNC connectors on the rear panel. The format may be either RGB, RGsB, Betacam or MII.

UPGRADING THE FIRMWARE

From time to time, CSI upgrades product firmware to fix bugs and upgrade features. The firmware inside Scan Do Ultra is designed to be upgraded by you or your dealer in the field. However, if you prefer, you have the option of returning the unit to us and we will be happy to perform the upgrade for you.

For the latest revision of the firmware, call us or consult our World Wide Web site at:

WWW.COMMSPECIAL.COM

You may obtain a firmware upgrade either by downloading it from our Web site or by requesting a distribution disk from Communications Specialties.

To find out what the present revision of the firmware in your product is, go to the STATUS SELECTION Submenu and select VERSION.

To upgrade the version of your firmware:

- Power Off Scan Do Ultra
- Connect the RS-232 Serial cable provided from the RS-232 port on the back of Scan Do Ultra to a serial port on your computer.

NOTE: The cable provided is a straight-through cable designed to connect directly to a 9-pin serial port on a PC.

- Power On Scan Do Ultra
- Set the BAUD rate of Scan Do Ultra and your computer to 9600 baud.
- Run the upgrade software provided on disk or down loaded from our Web site.
- Follow the instructions when you run the software.

ACCESSORIES

T he following accessories are available for Scan Do Ultra. They may be ordered from your dealer or directly from Communications Specialties, Inc. If you need an accessory not listed here or need assistance with a specific application, please give us a call.

ITEM #   **DESCRIPTION**

1204   13W3 male to 5 BNC cable (6 ft.) .
              Supports Sun, SGI, IBM PowerPC and NeXT.

1205   13W3 female to 5 BNC cable (6 ft.) .
              Supports Sun, SGI, IBM PowerPC and NeXT.

1152   RGBS cable (12 ft.) for BNC connection.
              Connects the RGBS output of Scan Do Ultra to video equipment with BNC connectors.

1153   RGBS cable (12 ft.) for Sharp LCD projectors.
              Connects the RGBS output of   Scan Do Ultra to the DB-15 connector on Sharp LCD projectors.

1155   RGBS cable (4 meter) for SCART connector on European TV monitors.
              Connects the RGBS output of Scan Do Ultra to a SCART A/V connector.

1156   RGBS input cable (3 ft.).
              Connects an RGBS signal to the HD-15 input of Scan Do Ultra.

1009   RF modulator.
              Modulates the COMPOSITE video output of Scan Do Ultra to TV channel 3 or 4 for connection to the antenna input of your TV.

REAR CONNECTOR
PIN-OUTS

POWER   AC Line

VGA OUT/MAC IN (HD-15 CONNECTOR)		**VGA Out**	**MAC In**
	1	Red	Red
	2	Green	Green
	3	Blue	Blue
	4	ID bit 2	ID bit-2
	5	Ground	Ground
	6	Red Ground	Red Ground
	7	Green Ground	Green Ground
	8	Blue Ground	Blue Ground
	9	N/C	N/C
	10	Monitor Present	Computer Present
	11	Ground (ID bit 0)	Ground (ID bit 0)
	12	ID bit 1	ID bit 1
	13	H-Sync Out	H-Sync In
	14	V-Sync Out	V-Sync In
	15	ID bit 3	Comp. Sync In

VGA IN/MAC OUT (DB-15 CONNECTOR)		**VGA In**	**MAC Out**
	1	Ground	Ground
	2	Red	Red
	3	Reserved	Comp. Sync Out
	4	ID bit 0	ID bit 0
	5	Green	Green
	6	Red Ground	Red Ground
	7	ID bit 1	ID bit 1
	8	N/C	N/C
	9	Blue	Blue
	10	ID bit 2	ID bit 2
	11	Ground	Ground
	12	V-Sync In	V-Sync Out
	13	Computer Present	Monitor Present
	14	Ground	Ground
	15	H-Sync In	H-Sync Out

SDI, COMPONENT VIDEO, VIDEO, GENLOCK IN/OUT, AND RGBHV INPUT (BNC)

Center	Video Out
Outer	Video Ground

S-VIDEO OUTPUT

1	Ground	3 Luminance
2	Ground	4 Chrominance

RS-232 REMOTE CONTROL

1	DCD	5 Ground	9 No Connection
2	RXD	6 DSR	
3	TXD	7 RTS	
4	DTR	8 CTS	

STATEMENT OF
WARRANTY

Communications Specialties, Inc. (CSI) warrants that for a period of three years after purchase by the Buyer, Scan Do Ultra will be free from defects in material and workmanship under normal use and service. A Return Material Authorization (RMA) number must be obtained from CSI before any equipment is returned by the Buyer. All material must be shipped to CSI at the expense and risk of the Buyer.

CSI's obligation under this warranty will be limited, at its option, to either the repair or replacement of defective units, including free materials and labor. In no event shall CSI be responsible for any incidental or consequential damages or loss of profits or goodwill.

CSI shall not be obligated to replace or repair equipment that has been damaged by fire, war, acts of God, or similar causes, or equipment that has been serviced by unauthorized personnel, altered, improperly installed or abused.

RMA numbers and repairs can be obtained from:

> **Communications Specialties, Inc.**
>
> **55 Cabot Court**
> **Hauppauge, NY 11788 USA**
> **TEL: (631) 273-0404**
> **FAX: (631) 273-1638**

or, in the Asia Pacific Region:

> **Communications Specialties Pte Ltd**
> **Singapore**
> **TEL: +65 6391 8790**
> **FAX: +65 6396 0138**
> **(See page 5 of this manual for complete address)**

RMA numbers can also be obtained from our web site:

> **http://www.commspecial.com**

Please have your serial number (located underneath your unit) available when contacting us.